

To: Office of Planning and Research
PO Box 3044, 1400 Tenth Street, Room 222
Sacramento, CA 95812-3044

From: California Energy Commission
1516 Ninth Street, MS-48
Sacramento, CA 95814

Project Title: Flow Battery Solution to Smart Grid Renewable Energy Applications

Project Location – Specific: 1244 Reamwood Ave

Project Location – City: Sunnyvale, CA **Project Location – County:** Santa Clara

Description of Project:

The proposed project will demonstrate the commercial viability of EnerVault's novel redox flow battery energy storage system (BESS). This demonstration comprises of integrating EnerVault's Vault-20 BESS (250kW, 1MWh) with an intermittent renewable energy source - a dual-axis photovoltaic (PV) system. The 36 month project will culminate in the deployment of a Vault-20 Beta system in conjunction with a 150kW PV system at a site in California's Central Valley. In Phase I, site assessment and compliance will be completed as well as development and demonstration testing of a Vault-20 Alpha system. In Phase II, lessons learned from the Alpha system evaluation will be used to complete the development, design, and construction of a Vault-20 Beta system. Phase III comprises commissioning the Beta system at a customer site and operating the system for 6 months. Additionally, the operating results will be analyzed and compared to the baseline for final quantification of benefits and operating costs. The capital costs, operating costs, and benefits will be used to determine a Total Cost of Ownership.

Project Team

EnerVault, the prime applicant, has expertise in electrochemical engineering, battery design, and electrochemical systems development. Ktech Corporation is a premiere technical services, products and manufacturing company based in Albuquerque, New Mexico and will act as the prime contractor for the DOE program. Ktech's subsidiary, Poly-Flow Engineering, LLC, will do the fabrication and manufacturing. Montpelier Nut Company will provide the demonstration site and JKB Energy will commission the project.

Project Budget

EnerVault project's total budget is \$9,528,567 of which \$4,764,284 is from DOE -NETL ARRA stimulus match awarded to Ktech. The remaining funds are from EnerVault (\$4,287,855). The total PIER budget for this project is \$476,428 which leverages \$4,764,284 in DOE- NETL ARRA grant funds. In general, the PIER budget can be broken down as follows:

- 78% - Direct Labor (60%) and Fringe Benefits (18%)
- 22% - Overhead

Project Benefits

Numerous benefits, such as energy efficiency savings, integration with renewables, peak load management, and renewable intermittency management, will be garnered from broad deployment of electrical energy storage as enabled by EnerVault's technology..

Additionally, this project will improve grid reliability, facilitate integration of renewable resources, and improve the use of existing transmissions assets.

Name of Public Agency Approving Project: California Energy Commission

Name of Person or Agency Carrying Out Project: EnerVault Corporation

Exempt Status: (check one)

- ☐ Ministerial (Sec. 21080(b)(1); 15268);
- ☐ Declared Emergency (Sec. 21080(b)(3); 15269(a));
- ☐ Emergency Project (Sec. 21080(b)(4); 15269(b)(c));
- ☐ Categorical Exemption. State type and section number _____
- ☐ Statutory Exemptions. State code number. _____
- ☒ Common Sense Exemption. 15061(b)(3)

Reasons why project is exempt:

The project involves energy storage system development and testing activities that do not have the potential to cause a significant environmental impact.

Lead Agency

Contact Person: Avtar Bining **Area code/Telephone/Ext:** 916-327-1411

If filed by applicant:

1. Attach certified document of exemption finding.
2. Has a Notice of Exemption been filed by the public agency approving the project? ☐ Yes ☐ No

Signature: _____ **Date:** _____ **Title:** _____

☒ Signed by Lead Agency

☐ Signed by Applicant

Date received for filing at OPR: _____